

## CLAIMS

1. Process for the production of a cable having at least one covering layer consisting of a composition based on at least one polymeric material by the use of an extruder, said extruder comprising a cylindrical casing, at least one extrusion screw of preset pitch positioned within said casing and having an axis of rotation parallel to the axis of said cylinder, a charging hopper located at a first end of said casing, a filtration section located close to the head of said screw, and positioned perpendicular to the axis of said screw, a connecting flange positioned downstream from the filtration section, and an extrusion head comprising a conveyor element and a die communicating with the exterior, so as to define a second end of said casing, said process comprising the stages of:
- conveying at least one conducting element inside of said extruder;
  - feeding the polymeric material, optionally premixed with other components of said composition, into said extruder via said charging hopper;
  - filtering said composition transferred and plasticized by said extrusion screw;
  - depositing said composition onto said at least one conducting element,
- characterized in that the filtration operation is performed with a filtration efficiency greater than 0.8.
2. Process according to Claim 1, characterized in that said filtration efficiency is greater than 0.9.
3. Process according to Claim 1, characterized in that said filtration operation is performed using a filter support plate of the sectorized type.
4. Process according to Claim 3, characterized in that said filter support plate is positioned downstream from said extrusion screw.
5. Process according to Claim 1, characterized in that said composition has a Melt Flow Index lower than 15 g/10

min (measured as per the standard ASTM 1238, with a capillary of diameter 2 mm, using a weight of 21 kg and heating the composition to a temperature of 240°C).

- 5 6. Process according to Claim 1, characterized in that said composition comprises a mineral filler in a quantity greater than 30 % by weight relative to the total weight of the composition.
7. Process according to Claim 6, characterized in that said quantity lies between 50 % and 80 % by weight
- 10 relative to the total weight of the composition.
8. Process according to Claim 6, characterized in that said mineral filler is a fire resistant filler.
9. Process according to Claim 1, characterized in that the cable obtained at the exit from said extruder is
- 15 conveyed to at least one cooling unit.
10. Process according to Claim 1, characterized in that the cable obtained at the exit from said extruder is conveyed to at least one crosslinking unit.
11. Process according to Claim 1, characterized in that
- 20 said at least one conducting element is subjected to a constant pull by a system of pulleys and/or gears.
12. Process according to Claim 11, characterized in that the speed of said pull lies between 600 and 1500 m/min.
13. Process according to Claim 1, characterized in that
- 25 downstream from said at least one cooling unit said cable is subjected to a drying stage.
14. Extruder for the production of a cable having at least one covering layer consisting of a composition based on at least one polymeric material, said extruder
- 30 comprising: a cylindrical casing; at least one extrusion screw of preset pitch positioned within said casing and having an axis of rotation parallel to the axis of said cylinder; at least one charging hopper located at a first end of said casing; a filtration section located close to
- 35 the head of said screw, and positioned perpendicular to the axis of said screw, said filtration section comprising at least one filtration element held by a support element;

5 a connecting flange positioned downstream from said filtration section, and an extrusion head comprising a conveyor element and a die communicating with the exterior, so as to define a second end of said casing, characterized in that said support element is a plate of the sectorized type.

15. Extruder according to Claim 14, characterized in that said plate of the sectorized type includes a structure of truncated conical shape.

10 16. Extruder according to Claim 15, characterized in that said structure of truncated conical shape comprises a plurality of support elements of said at least one filtration element bearing onto said structure and extending radially towards the inside of said structure.

15 17. Apparatus for the production of a cable having at least one covering layer consisting of a composition based on at least one polymeric material, said apparatus comprising:

20 - at least one charging hopper for feeding the polymeric material, optionally premixed with other components of said composition;

25 - at least one extruder comprising an extrusion screw and an extrusion head inside of which is contained a die for the purpose of fitting said covering layer around at least one conducting element of said cable;

- at least one device for unwinding said conducting element, and

30 - at least one device for winding said cable, characterized in that the filtration section of said extruder has a filter support plate of the sectorized type.

18. Apparatus according to Claim 17, characterized in that it comprises one or more units for cooling said cable.

35 19. Apparatus according to Claim 18, characterized in that it comprises one or more units for crosslinking before said one or more cooling units.

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